

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

Claim 1 (Canceled).

2. (Currently amended) A method ~~according to claim 1, further~~ for guiding the selection of a therapeutic treatment regimen for a patient with a disease or medical condition, said method comprising:

(A) providing information about the methylation status at selected sites of the DNA of the patient to a computing device comprising:

\_\_\_\_\_ a first knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells,

\_\_\_\_\_ a second knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient,

\_\_\_\_\_ a third knowledge base comprising a plurality of different therapeutic regimens for diseased cells or medical conditions,

\_\_\_\_\_ a fourth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions, and

(B) generating in said computing device a listing or ranked listing of diseases or medical conditions based on the information about the methylation status at selected sites of the DNA of the patient, the first knowledge base and the second knowledge base, and

(C) generating in said computing device a ranked listing of available therapeutic treatment regimens for said patient based on the information generated in step (B) and the third knowledge base and fourth knowledge base.

Claims 3-5 (Canceled).

6. (Currently amended) A The method according to claim 1 ~~2~~, in which said patient information in addition to the information about the methylation status at selected sites of the DNA comprises gender, age, weight, hemoglobin information, neuropathy information, neutrophil information, pancreatitis, hepatic function, renal function, drug allergy and intolerance information.

Claims 7-15 (Canceled).

16. (Currently amended) A method ~~according to claim 14, further~~ for treatment of a patient with a disease or medical condition, said method comprising:

(A) isolating a DNA-containing sample from said patient;

(B) analyzing cytosine methylation patterns at selected sites of the DNA contained in said sample;

(C) providing data about the methylation status at selected sites of the DNA of the patient, thereby creating a first knowledge base comprising said data, a second knowledge base comprising information about a plurality of different methylation statuses at selected sites of the DNA in cells with a known disease or medical condition and/or healthy cells, a third knowledge base comprising a plurality of expert rules for evaluating and selecting a type of disease or medical condition based on the methylation status at selected sites of the DNA of a patient, a fourth knowledge base comprising a plurality of different therapeutic regimens for diseased cells or medical conditions, a fifth knowledge base comprising a plurality of expert rules for evaluating and selecting therapeutic treatment regimens for diseased cells or medical conditions,

(D) generating a ranked listing of diseases or medical conditions based on the data of the first knowledge base, the second knowledge base and the third knowledge base, and

(E) generating a ranked listing of available therapeutic treatment regimens for said patient based on the information generated in step (D) ~~according to claim 14~~ and the fourth knowledge base and the fifth knowledge base.

17. (Currently amended) A The method according to claim 16, characterized in that the therapeutic treatment regimen is a preventive treatment regimen.

Claims 18-19 (Canceled).

20. (Currently amended) A The method according to claim 14 16, in which said patient data in addition to the data about the methylation status at selected sites of the DNA comprises gender, age, weight, hemoglobin information, neuropathy information, neutrophil information, pancreatitis, hepatic function, renal function, drug allergy and intolerance information.

21. (Currently amended) A The method according to claim 14 16, wherein said patient data includes prior therapeutic treatment regimen information.

22. (Currently amended) A The method according to claim 14 16, wherein said patient data includes prior patient information stored in said computing device.

Claims 23-50 (Canceled).